

Family Branchiostegidae

The Tile Fishes

Body elongate, fusiform, compressed. Head large, compressed. Head moderate, deep, compressed. Snout usually long, deep. Eye small, high, median. Mouth ^{protractile} moderate or large, low, terminal. Maxillary not reaching below eye. Teeth firm, rather strong, none on palate. Premaxillaries protractile, usually with one or more blunt posterior canines.
Nostrils 2 each side.

Opercles unarmed. Gill membranes separate or but slightly united. Gills 4, long slit behind fourth. Pseudobranchiae well developed. Lower pharyngeals separate. Air bladder degenerated.

Bones of head not greatly developed, not cavernous, without suborbital

Füzetek, Budapest, vol. 5, 1881, p. 158
 (Singapore). — Meyer, Ann. Soc. Espan.
 Hist. Nat. Madrid, vol. 4, 1885, p. 22 (Manado,
 Celebes). — Day, Fauna British India, vol. 2,
 1889, p. 90. — Elera, Cat. Fauna Filip., vol. 1,
 1895, p. 529 (Cebu).

Iuentis margaritifera Steindachner, Sitzsber.
 Akad. Wiss. Wien, band 60, heft 1, 1870, p.
 565 (Singapore).

Resembles Siganus punctatissimus in
 its general color pattern but the light
 dots not so numerous and the body
 more elongate.

Seychelles, India, East Indies,
 Melanesia, China, Japan. Hung. Park's
 original account describes the color
 as greenish yellow above with white
 dots. Günther, quoting Bleeker, gives
 the forehead and snout with transverse
 blue streaks, which may be some other species.

bony stay and opercles usually
unarmed. Vertebrae 24 to 30,
of with 13 to 15 caudal or absent.
Pyloric coils few, scales small,
steroid. Lateral line ^{single} distinct,
complete, more or less concurrent
with profile of back. Dorsal fin
long, low, usually continuous,
spinous portion always much less
developed than soft portion, never
obsolete. Anal long, with few
feeble spines. Caudal forked or
emarginate, deeply diphycercal.
Pectorals moderate, rays branched.
Ventrals thoracic or subjugular,
with spine and 5 rays, fine
close together.

Fishes of tropical and temperate
seas, some reaching a large size
and living in deep water. Most
with bright or delicate colors.

243 (Canton). — Bleeker, Journ. Ind.

Arch., vol. 2, 1848, p. 638 (Bima, Sumbawa).

— Bleeker, Verh. Batav. Genoot. (Nat. Ichth.

Jap.), deel 25, 1853, p. 15. — Bleeker, Nat.

Tijds. Ned. Indie, deel 13, 1856, p. 193 (Ternate),

p. 334 (Batavia, Bilitan, Bali, Batu, Celebes,

Ternate); l.c., deel 15, 1858, p. 200 (Goram

Island), p. 242 (Singapore); l.c., deel 17,

1858-59, p. 130 (Atapoepe, Timor); l.c., deel

20, 1859-60, p. 141 (Badjao, Boni). — Bleeker,

Act. Soc. Sci. Ind. Néerl., deel 1, no. 5, 1856,

p. 6 (Amboina); l.c., deel 3, no. 3, 1857-58,

p. 3 (Kiosio), p. 6 (Japan).

Amphacanthus margaritifer Bleeker, l.c., deel

1, no. 3, 1856, p. 4 (Manado).

Yentis margaritifer Bleeker, Ned. Tijds. Dierk.,

deel 1, 1863, p. 254 (Wahai, Ceram), p. 270 (Atapoe, Timor). — Day, Fishes of India, pt. 1, 1875, p.

167, plate 40, fig. 5. — Károli, Jánmesez-

Günther, Cat. Fish. Brit. Mus., vol. 3, 1863, p.

317 (East Indies). —

Analysis of Genera

- a.¹ Caulolatilinae. Soft dorsal and anal rays 22 to 27; ~~dorsal spines~~
- b.¹ Dorsal spines 7 to 9; ventrals thoracic. Caelolatilus.
- b.² Dorsal spines 4; ventrals subjugular. Prolatilus.
- a.² Branchiosteginae. Dorsal and anal rays 13 to 15.
- c.¹ No labial barbel or predorsal adipose appendage. Branchiostegus.
- c.² Labial barbel at hind end of mouth; predorsal with large adipose appendage. Lopholatilus.

Genus Caulolatilus Gill

Caulolatilus Gill, Proc. Acad. Nat.
Sci. Philadelphia, p. 240, 1862. (Type
Latilus chrysops ^{Valenciennes} Cooper, monotypic.)

Dekaya Cooper, Proc. Cal. Acad. Sci. ^{vol. 3,}
p. 72, 1863. (Type Latilus princeps
Genys, monotypic.)

(Alekayia Hilne-Edwards and Haine
1851, in corals, not involved.)

15264 and 15403. Atulayan Island.

June 18, 1909. Length 188 to 240 mm.

6307. Bugsuk Island, Balabac.

January 5, 1909. Length 192 mm.

A527. Bulan Island. September 13, 1909.
Length 305 mm.

A581. Busbus Point Siasi Island.
September 20, 1909. Length 280 mm.

9822. Cagayan, Sulu Island. January 8,
1909. Length 228 mm.

, 9949, A1523, A1524, 14270 [2181]. Doc Can
Island, Sulu Sea. January 7, 1909. Length
177 to 248 mm. Generally olivaceous fading
to greenish yellow, back with rather
smoky purplish wash. Side of head
brighter greenish yellow, with 3 distinct
purplish stripes under eye and parallel
with lower limb of preopercle. Top of head
with ground color showing as brownish
yellow spots in broad network of very

Body elongate, deepest anteriorly
and tapering down to rather narrow
caudal peduncle. Head rather small,
deep, upper profile arched. Snout
long. Eye small, little advanced
in head. Mouth moderate, but
little inclined, jaws subequal.
Lips fleshy. Maxillary narrow,
not reaching below eye. Teeth
in villiform bands, with outer
row of stronger more acute teeth;
hind teeth in each jaw canine like,
directed forward, posterior upper
largest. Preopercle edge serrated,
several uniform. Opercle with blunt,
flat spine. Gill membranes
narrowly connected, form fold across
isthmus. Gill rakers short, stout.
Branchiostegals 6. Scales small,
firmly adherent, ctenoid. Lateral
Vertebrae 27, of which 15 caudal.
line continuous, concurrent with profile
of back. Dorsal with 7 to 9 slender,

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pointed, graduated, with 22 to 27 soft rays. Anal like soft dorsal, with 1 or 2 small spines and over 20 soft rays. Caudal forked. Pectoral moderate, placed in lower half of body. Ventral moderate, thoracic.

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Caulolatilus chrysops (Valenciennes)

Latilus chrysops Valenciennes, Hist.
Nat. Poiss., vol. 9, p. 496, 1833 (type
locality, "sur les côtes du Brésil").

— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 253, 1860 (West Indies).

Caulolatilus chrysops Gill, Proc.
Acad. Nat. Sci. Philadelphia,
p. 240, 1862 (reference), p. 67, 1865
(reference).

1. Specimens with very numerous spots
on body.

15407. Atulayan Island. June 18, 1909.
Length 240 mm.

6510. Balibias Bay. July 17, 1908.
Length 205 mm.

8360. Buang Bay, Talajit. May 15, 1909.
Length 250 mm.

A 1230. Gomomo Island. December 3, 1909.
Length 233 mm.

7279. Gigoso Point, Unapuādan Bay,
Samar Island. July 28, 1909. Length 160 mm.

A 1429. Kapopokang. December 28, 1909.
Length 245 mm.

A 1314. Labuan, Blanda Island. December
14, 1909. Length 263 mm.

8313. Lode Bay, Ilustacado Island. March
13, 1909. Length 228 mm.

9085. Malhaw Island. July 27, 1909.
Length 227 mm.

Caulolatilus cyanops Poey

Caulolatilus cyanops Poey, Report.
Hist. Nat. Cuba, vol. I, p. 312, 1867
(type locality, Cuba).

— Jordan, and Evermann, Bull. U. S.
Nat. Mus., no. 47, pt. 3, p. 2278, 1897
(copied).

6588. Maricaban Island. July 21, 1908.

Length 228 mm.

A 110. Philippines. Length 252 mm

7239. Masinloc. Length 260 mm.

4374. Philippines. Length 225 mm.

7258. Port Matalvi, Luzon. November 23, 1908.

Length 253 mm. Dusky orange, spots pale blue, largest on head and breast. None on dorsal or caudal, few on anal.

A 1327. Tifu Bay. December 10, 1909. Length 260 mm.

6439. Tilia, Lubang. July 14, 1908. Length 277 mm.

A 1368. Basa Island or reef, Celebes. December 17, 1909. Length 253 mm.

A 939, A 951, 13302, 14883. Dodepa and Pasejogd Islands, Celebes. November 16, 1909. Length 140 to 245 mm.

A 873,

12789 and 20037. Limbe Strait, Celebes.

November 10, 1909. Length 138 to 220 mm. Spots dark blue, bordered with black on fading. Spines of dorsal, anal and ventral spotted, with

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Caulolatilus microps Goode and Bean

Caulolatilus microps Goode and Bean,
Proc. U. S. Nat. Mus., vol. 1, p. 42,
1878, (type locality, Snapper Bank
⁽¹⁸⁷⁷⁾ off Pensacola, Florida, in 35 fathoms).

— Jordan and Evermann, Bull. U. S.
Nat. Mus., no. 47, pt. 3, p. 2277, 1898
(Pensacola Snapper Banks).

Caulolatilus chrysops (not Dalencienne) Jordan
and Gibert, Bull. U. S. Nat. Mus., no. 16,
p. 626, 1883 (compiled).

ground color plain dusky yellow.

18496. Tana Kebe Island, Celebes.

December 21, 1909. Length 114 mm.

A 1187. Gome Road, Gillolo Island.

December 1, 1909. Length 223 mm.

→ A 1054. Tidore Island, south of Ternate.

November 24, 1909. Length 235 mm.

{ A 1108. Ternate market. November 26, 1909.

Length 263 mm.

Caulolatilus princeps (Jenyns)

Latilus princeps Jenyns, Voy. Beagle,
Fishes, p. 52, pl. II, 1840 (type
locality, Chatham Island, Galapagos Archipelago).
— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 253, 1860 (copied).

Caulolatilus princeps Gill, Proc. Acad.
Nat. Sci. Philadelphia, p. 68, 1865
(reference). — Jordan and Bollman, Proc.
U. S. Nat. Mus., vol. 1, p. 182, 1889 (Charleston Islands).
— Jordan and Evermann, Bull. U. S. Nat.
Mus., no. 47, pt. 3, p. 2276, 1898; pt. 4, pl.
330, fig. 799, 1900. — Fowler, Proc.
Acad. Nat. Sci. Philadelphia, vol. 75,
p. 298, 1923 (La Jolla, California).
— Steindachner, Denks. Akad. Wiss. Wien, vol. 72, p.
35, 1902 (Galapagos Archipelago). — Woodruff and Heller,
Proc. Washington Acad. Sci., vol. 6, p. 417, 1905 (Galapagos
Archipelago). — Starks, Proc. U. S. Nat. Mus., vol. 30, p.
797, 1906 (Callao, Peru). — Evermann and Radcliffe, Bull. U. S.
Nat. Mus., no. 95, p. 110, 1917 (Lobos de Afuera; Callao; Pisco).

12685. Endeavor Strait. December 23, 1908.

Length 165 mm.

7280, ^{and 7383.} Gigozo Point, Luminapuwan Bay,
Hamar Island. July 28, 1909. Length ¹⁴⁸⁵ 157 mm.

21324. Great Tobea Island. December 15,
1909. Length 94 mm.

9482. Yuntea Island. December 20, 1908.
Length 228 mm.

11134. Lode Bay, Ostacado Island.
March 13, 1909. Length 223 mm. [1340.]

5442, 5444, 7468, 7469. Maculabo Island.
June 14, 1909. Length 176 to 190 mm.

6061. Mansalay, Mindoro Island.
June 4, 1908. Length 278 mm.

6268. Medio Island, Galera Bay,
Mindoro. June 9, 1908. Length 270 mm.

8890. Near Palag Bay, Luzon. June 16, 1909.
Length 255 mm.

5921. Parang, Mindanao. May 23, 1908.
Length 245 mm.

Dekaya anomala Cooper, Proc. Cal.
Acad. Sci.,^{vol. 3,} p. 70, fig. 17, 1864 (type
locality, Catalina Island, California).

Caulolatilus anomalous Gill, Proc.
Acad. Nat. Sci. Philadelphia, p. 68,
1865 (type).

— Streets, Bull. U. S. Nat. Mus.,
no. 7, p. 48, 1877 (Lower California).

— Jordan and Gilbert, Bull. U. S.
Nat. Mus., no. 16, ~~#~~ p. 625, 1883
(compiled).

Caulolatilus affinis Gill, op. cit. (type
locality, Cape St. Lucas, Lower
California).

? Caulolatilus cabezon Evermann and Seale,
Bull. U. S. Nat. Mus., no. 95, p. 111, pl. 10,
fig. 3, 1917 (type locality, Chimbote, Peru;
Paita, Peru).

15618 [1720]. Casagoran, Mahon Island.

July 27, 1909. Length 164 mm. Spots on head posteriorly ocellate with centers bright blue and edges slate; rims darker on spots of lower head and breast.

7619. Cataingan Bay. April 17, 1908.
Length 143 mm.

257 [1017]. Cataingan Island, near Balabac. December 29, 1909. Length 198 mm. Blue spots on side of head and lower contour of body rather small and on upper part of body very numerous and smaller than others.

13932. Cebu market. April 4, 1908.
Length 182 mm.

5424 and 13931. Cebu market. April 7, 1908. Length 146 to 180 mm.

8546. Cuyo Harbor. April 9, 1909.
Length 250 mm.

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Genus Prolatilus Gill

Prolatilus Gill, Proc. Acad.
Nat. Sci. Philadelphia, p. 67,
1865. (Type Latilus jugularis
Valenciennes, orthotypic.)

Eyes approximated. Forehead
nearly. Hind edge of preopercle
denticulate. Caudal truncate.
Dorsal spines 4. Ventrals
subjugal.

Prolatilus jugularis (Valenciennes)

Latilus jugularis Valenciennes,
 Hist. Nat. Poiss., vol. 9, p. 500,
 pl. 279, 1833 (type locality, "sur
 les côtes sableuses de
 Valparaiso"). — Jenyns, Zool.
 Voy. Beagle, pt. 4, Fish, p. 51,
 1842 (Valparaiso). — Gay,
 Hist. Chile, Zool. 2, p. 203, 1848.
 — Günther, Cat. Fish. Brit. Mus., vol. 2, p.
 253, 1860 (Chile). — Steindachner, Zool. Jahrb. Suppl.
 vol. 4, heft 2, p. 301, 1878.

— Delin, Cat. Peces de Chile,
 t. 83, 1901 (reference Chanaral,
 Valparaiso).

Prolatilus jugularis J. F. Lebott,
 Proc. Acad. Nat. Sci. Philadelphia,
 p. 475, 1899. — Fowler, Proc. Acad. Nat.
 Sci. Philadelphia, vol. 78, p. 280, 1926
 (Valparaiso).

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Depth $3\frac{3}{4}$, elongate, moderately compressed, deepest from head; head $3\frac{1}{4}$, width $1\frac{1}{2}$. Snout 3. in head, broad, convex, long as wide; eye $5\frac{1}{5}$, $1\frac{1}{2}$ in snout, $\frac{1}{4}$ in interorbital; maxillary extends little beyond hind nostril, not quite to eye, expansion $3\frac{1}{2}$ in eye, length 3 in head; teeth in bands in jaws, outer row little enlarged in each; front nostril at last third in snout, hind one little larger and much closer to front one than eye; interorbital $3\frac{4}{5}$ in head, slightly concave; preorbital slightly less than orbit; hind preopercle edge entire; opercular spine small.

Scales firmly adherent, small on caudal base; 18 rows

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across cheek. Lateral line arched little at first, dropping behind until midway at caudal base; tubes slender, small.

D. IV, 27, fourth spine $3\frac{1}{3}$ in ⁼ head, graduated from first to last, fifth ray 3; A. II, 22, fifth branched ray 4; caudal $1\frac{3}{5}$; pectoral $10\frac{1}{8}$; ventral $1\frac{3}{5}$.

Clouded brown on back and above, whitish below.
Fins pale.

Chile.

Commercial Museum of Philadelphia.
~~Castelnau~~ ^{Bo} one example. Valparaiso, Chile. Length 620 mm.
Dried specimen;

Genus Branchiostegus Rafinesque

Branchiostegus Rafinesque, Analyse
de la nature, p. 86, 1815. (Type
Coryphaena japonica Houttuyn. Virtually,
as Branchiostegus Rafinesque proposed
to replace Coryphaenoides Lacépède.)

Coryphaenoides (not Gunner 1761)
Lacépède, Hist. nat. Poiss., vol. 3, p. 219,
1802. (Type Coryphaenoides houttuyni
Lacépède = Coryphaena japonica
Houttuyn. Monotypic.)

Latisus Cuvier, Hist. nat. Poiss.,
vol. 5, p. 368, Jan. 1830. (Type
Coryphaena japonica Houttuyn.
Designated by Jordan, Tanaka,
Snyder, Journ. Coll. Sci., Tokyo,
vol. 33, art. 1, p. 187, 1913.)

Siganus canaliculatus (Mungo Park).

Chaetodon canaliculatus Mungo Park, Trans.

Linn. Soc. London, vol. 3, 1797, p. 33. Sumatra.

Amphacanthus canaliculatus Bleeker, Nat.

Tijds. Ned. Indie, deel 3, 1852, p. 580 (Padang).

— Bleeker, Act. Soc. Ind. Neerl., vol. 3, no. 9,

1857-8, p. 4 (Trusikan, Sumatra). — Jouan,

Mem. Soc. Cherbourg, vol. 3, series 2, 1868, p. 267

(Hong Kong).

Tenthis canaliculata Günther, Cat. Fish. Brit.

Mus., vol. 3, 1861, p. 316 (copied).

Tenthis canaliculatus Fowler, Journ. Acad.

Nat. Sci. Phila., vol. 12, series 2, 1904, p. 546

(Padang).

Amphacanthus margaritiferus Valenciennes,

Hist. Nat. Poiss., vol. 10, 1831, p. 145. Amboina,

Vanicolo. — Schlegel and Müller, Verhand.

Nat. Ges. Zool., 1839-44, p. 10 (Vnikoro). —

— Richardson, Ichth. China Jap., 1846, p.

Body elongate, tapers back from head. Head rather elevated. Snout obtuse. Eye rather large. Mouth little inclined, jaws subequal. In jaws outer row of teeth little stronger, inner ones rather small. Premaxillaries usually with blunt, small, posterior canine. Hind preopercle edge finely denticulate. Jape and lips without adipose appendages. Branchiostegals 6. Air bladder simple. Scales moderate to small. Soft dorsal and anal rays in moderate number. Median pectoral ray largest, rays below abruptly shorter.

Species few, mostly in the Indo-Pacific.

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Analysis of Species

- a.¹ Scales 60 to 76 in lateral series to caudal base.
- b.¹ Sides with 20 to 22 pale transverse bands. japonicus
- b.² Body uniform. tollardi
- c.¹ Cheeks with 7 rows of scales. guttatus
- c.² Cheeks with 8 rows of scales, 3 median rows enlarged. ilocanus
- c.³ Cheeks with 10 rows of uniform scales.
- d.¹ Large brown scapular blotch; 3 white lines radiate down from eye. vittatus
- d.² No scapular blotch; no white lines from eye. wardi.
- a.² Scales 100 to 175 in lateral series to caudal base; numerous dark cross bars. oliatiss.
- b.³ Two parallel dark violet lines from head to caudal. sericeum.

Branchiostegus japonicus (Houttuyn)

Coryphaena japonica Houttuyn, Verh.
Holland. maatsch. wet. Haarlem,
vol. 20, p. 311, 1787 (type locality,
Japan). — Gmelin, Syst. Nat.
Linn., vol. 1, p. 1194, 1788 (copied).
— Forster, Fauna Indica, p. 14,
1795 (reference).

Snyder, Proc. U. S. Nat. Mus., vol. 47, p. 417, 1911 (Tokyo; Shimizu).

Latilus japonicus Jordan and Snyder,
Proc. U. S. Nat. Mus., ^{vol. 23, p. 775, 1901 (reference);} vol. 24, p. 48,
1902 (Nagasaki); — Jordan, Yanaka,
Snyder, Journ. College Sci. Tokyo,
vol. 33, p. 187, 1913 (reference). —
Izuka and Matsuura, Cat. Zool.
Spec. Tokyo Mus., Vert., p. 144,
1920 (Tokyo market).

Jordan and Richardson, Mem. Carnegie Mus.,
vol. 4, no. 4, p. 192, Aug. 28, 1908 (Takao; Yilan).
— Jordan and Thompson, Mem. Carnegie Mus., vol.
4, no. 4, p. 260, Sep. 1914 (Aisaki; Osaka).

Siganus trimaculatus (Valenciennes).

Amphacaanthus trimaculatus Valenciennes,

Hist. Nat. Poiss., vol. 50, 1835, p. 47. ¹⁵⁹ & Shark's
Bay, West Australia, Siam.

Ten this trimaculatus Günther, Cat. Fish. Brit.
Mus., vol. 3, 1861, p. 617 (copied). — Bleeker,
Ned. Tijds. Nerk., deel 1, 1865, p. 174 (Siam).

Depth $\frac{5}{6}$ in total. Snout rather broad,
convex. Caudal emarginate. Purple brown,
dotted all over with very small whitish
or bluish dots which extend on dorsal
and anal. Caudal brown. Pectoral yellow.
Ventral variegated brown and white. Length
153 mm.

(Valenciennes.)

— Chabanaud, Bull. Mus. Hist. Nat.,
Paris, vol. 30, p. 361, 1924 (reference).

. Branchiostegus japonicus Fowler, Proc.
Acad. Nat. Sci. Philadelphia, vol. 77,
p. 249, 1925 (hatal coast; Yugela River);
vol. 81, p. 592, 1929 (Tokyo; Nagasaki),
p. 596 (Shanghai), p. 611 (Hong Kong);
vol. 86, p. 474, 1934 (hatal).

(Journ. Fac. Sci. Univ. Tokyo, vol. 3, pt. 1, p.
30, Nov. 4, 1931 (reference, synonymy);

— Tanaka, Japanese Fishes, p. 88, figs.

212 a - c, 1933 (Japan).

— Jordan and Hubbs, Mem. Carnegie
Mus., vol. 10, no. 2, p. 248, June 27,
1925 (Tokyo; Mikawa Bay; Toyama;
Shizuoka; Yokohama; Kobe; Misaki;
Miyazu). — ~~Fowler sp. cit.~~ Barnard,
Ann. South African Mus., vol. 21,
pt. 2, p. 501, Oct. 1927 (hatal);
Zululand; 20 to 60 fathoms).
— Fowler, op. cit.,

fuscescens.

66032. U.S.N.M. Parrotfish. Albatross Collection. Length 351 mm. As Siganus punctatus.
 71601. U.S.N.M. Naha, Okinawa, Riu Kiu Islands. Albatross Collection 1906. Length 135 mm. As Siganus fuscescens.

72008. U.S.N.M. Naha. Albatross Collection 1906. Length 118 mm.

84245. U.S.N.M. Gumboanga. Dr. Fred Baker. 4 examples. Length 138 to 163 mm.

82909 U.S.N.M. Fiji. Wilber Exploring Expedition. Length 203 mm.

Coryphaenoides houttuyni Lacépède,
Hist. Nat. Poiss., vol. 3, p. 176, 1802
(n. Houttuyn).

Coryphaena sinensis Lacépède, op. cit.,
pp. 176, 209 (type locality, "peintures chinoises"
= China).

Latilus sinensis Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 23, p. 369, 1900 (Tokyo).

Latilus ruber Kishinouye, Zool. Mag.,
vol. 19, p. 59, 1907. (Type locality Tokyo). —
Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 417,
1913 (Tokyo; Ryukyu).

Latilus auratus Kishinouye, op. cit.

(type locality, Tokyo). — Jordan, Tanaka,
Snyder, Journ. College Sci. Tokyo,
vol. 33, p. 188, 1913 (reference). —

Izuka and Matsuura, Cat. Zool.
Spec. Tokyo Mus., Vert., p. 144, 1920
(Kochi, Tosa). — Chabanaud, Bull.
Mus. Hist. Nat., Paris, vol. 30, p. 361,
1924 (reference).

6368 and 10553. Jolo Island, Jolo.

March 7, 1908. Length 138 to 168 mm.

9160. Little Santa Cruz. May 26, 1908.
Length 203 mm.

21812. Pandanon Island. March 24, 1909.
Length 50 mm.

7681. Ulugan Bay, Palawan. December 28,
1908. Length 202 mm.

A1578. Hoo Wan, Eastern Formosa. January 29,
1910. Length 335 mm.

52502. U.S.N.M. Apia, Samoa. Bureau of
Fisheries. Length 252 mm.

58050. U.S.N.M. Zamboanga. Dr. E. G. Mearns.
2 examples. Length 175 to 188 mm. As Viganus
fuscescens.

65660. U.S.N.M. Mangareva. Albatross
Collection. Length 163 mm.

66031. U.S.N.M. Kusail. Albatross Collection.
2 examples. Length 135 to 150? mm. As Viganus

Latilus argentatus Cuvier, Hist.
Nat. Poiss., vol. 5, pp. 369,⁴⁹³ 1830 (type
locality, "île peinture chinoise";
Mauritius).

— Schlegel, Fauna Japonica, Poiss.,
pts. 2-4, p. 63, pl. 28, fig. 2, 1842
(Nagasaki Bay).

— Bleeker, Verh. Batavia. Genoot.
(Nal. Ichth. Japan.), vol. 25, p. 12,
1853 (reference); (Nal. Ichth.
Japan.), vol. 26, p. 5, 85, 1857
(Nagasaki); Lect. Soc. Sci. Ind.
Néerl., vol. 3, no. 3, p. 5, 1857-58
(Japan). — Günther, Cat. Fish. Brit.
Mus., vol. 2, p. 252, 1860 (China). —
Bleeker, Rech. Faune Madagascar, Pollen et Van
Dam, pt. 4, h. 78, 1874 (reference).

Phila., 1923, p. 42 (Madagascar). —

Fowler, Bishop Mus. Bull., no. 22, 1925,
p. 34 (Samoa).

Ten this oligostictus Kner, Vitza. Akad.

Wiss. Wien, bound 58, 1868, pp. 30, ³⁴⁵ plate 7, fig.

23. Kanathia, Viti Islands, Fiji.

Ten this vitiensis Sauvage, Bull. Soc. Philomath.

Paris, vol. 6, series 7, 1882, p. 173. Fiji.

Siganus fuscescens (non Houttuyn) Seale.

and Bennet, Proc. U. S. Nat. Mus., vol. 33, 1907,

p. 247 (Gambowaya). — Kendall and Goldsborough,

Nem. Mus. Comp. Zool., vol. 26, no. 7, 1911, p.

313 (Kusaie, Caroline Islands) — Snyder,

Proc. U. S. Nat. Mus., vol. 42, 1912, p. 511

(Okinawa, Riu Kiu).

Siganus punctatus (non Schneider) Kendall

and Goldsborough, l.c., p. 313 (Makemo),

Pamotus).

- Hystrom, Bih. Kon. Sv. Vet.
Akad. Handl., Stockholm, band
13, afd. 4, no. 4, p. 29, 1888
(Nagasaki).
- Steindachner and Löderlein,
Denks. Akad. Wiss. Wien, math.-
naturw. Kl., vol. 48, p. 25, 1884.
— Steindachner, Ann. K. K. naturh. Hofmus. Wien,
vol. 11, p. 208, 1896 (Robe, Hiogo, Nagasaki).
- Gilchrist and Thompson, Ann.
South African Mus., vol. 6, pt. 3,
p. 250, 1909 (off Tugela River mouth,
depth, 46 to 55 fathoms). —
Jordan, Tanaka, Snyder, Journ.
College Sci. Tokio, vol. 33, p. 187,
1913 (reference). — Gilchrist
and Thompson, Ann. Durban
Mus., vol. 1, pt. 4, p. 348, May 21, 1917
(reference). — Izquierdo and Katsuura,
Cat. Zool. Spec. Tokyo Mus., Vert., p.
144, 1920 (Kawajiri, Satsuma).

— Chabanaud, Bull. Mus. Hist. Nat., Paris, vol. 30, p. 361, 1924
(reference).

35-

depth $3\frac{3}{5}$ to $3\frac{4}{5}$; head $3\frac{1}{3}$ to $3\frac{3}{5}$, width $2\frac{1}{3}$. Snout $2\frac{1}{2}$ in head; eye $4\frac{3}{4}$ to $5\frac{1}{8}$, $2\frac{1}{6}$ in snout, $1\frac{2}{5}$ in interorbital; maxillary reaches eye, expansion $2\frac{1}{8}$ in eye, length $2\frac{1}{3}$ to $2\frac{2}{5}$ in head; interorbital $3\frac{1}{2}$, convex; preopercle edge finely serrate. Gill rakers 7+13, lanceolate.

Scales 61 to 63 + 8 to 12 in lateral line; tubular scales 44 to 54 + 4 or 5 in lateral line; 7 or 8 scales above, 14 to 18 below; 22 to 27 predorsal. Scales with 11 to 16 marginal striae, 8 to 30 submarginals; 30 to 72 apical points, with 3 or 4 rows of basal elements.

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D. VII, 15, I, third spine 3 to
 $3\frac{2}{5}$ in head, thirteenth ray
 $1\frac{1}{2}$ to $1\frac{3}{4}$; A. II, 12, I, eleventh
ray $1\frac{4}{5}$ to 2; caudal $1\frac{1}{4}$, slightly
convex behind; pectoral $1\frac{1}{5}$;
ventral 2.

Body with 20 to 22 violet,
white and yellow transverse
bands. Head violet rosy,
with blue spots on cheeks. Eye
pale olive and white. Dorsal
rays red, anal yellow. Caudal
yellow at base and deep rosy
spot, rays yellow, pink and
mauve. Ventral pale blue.

Zululand, Natal, Mauritius,
China, Japan.

C. H. & P., one example.
Natal coast, in 20 fathoms.

H. W. Bell Marley.

C. H. & P., one example.
Yuguela River, in 60 fathoms.
H. W. Bell Marley.

Branchiostegus tollardi (Chabanaud)

Latilus tollardi Chabanaud, Bull. Mus.

Hist. Nat. Paris, p. 357, 1924 (type
locality, Annam).

Côte d'

7967. Pagatay Bay, Luzon. February 20, 1909. Length 214 mm. Very dark brown, fading purplish above and white below, then showing numerous brassy or sulphur yellow spots about size of number 12 shot, somewhat larger at side medially than lower disappearing; spots show very dimly through brown before fading. Three horizontal purplish stripes cross cheek merging in ground color on hind portion of head, upon which numerous rather larger spots. Fins show no markings, color like body; membranes of soft fins hyaline. Pectoral rays hyaline yellow.

A 715. Si Amil Island. September 27, 1909. Length 257 mm.

4891. Siasi Island, Jolo. February 17, 1908. Length 160 mm. "Banis" (Moro). Generally pale purplish blue, darker

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Depth 4; head 4. Eye $3\frac{4}{5}$ in
head; maxillary 2, reaches eye;
preorbital equals $\frac{2}{3}$ of eye;
hind preopercle edge finely
serrated; upper teeth with
outer little enlarged row, 4
anterior moderate canines,
with inner band of small fine
teeth, narrowing posteriorly;
lower teeth with outer enlarged
row and inner band of fine teeth
and narrowing to a single row
posteriorly. Gill rakers 8+12.

Scales 80 in lateral line;
above, 70 in lateral line below;
^{tubes 55 in lateral line; scales}
^ 6 above, 16 below; 7 rows on
cheeks, with limb of preopercle
naked.

D. VIII, 15, last rays end
in a filamentous point reaching
caudal base; A. II, 13, end of
soft fin also reaches caudal base;

40

caudal largely scaly, trilobate,
median lobe rounded and upper
and lower pointed; pectoral rays 15,
long as head; ventral shorter.

Red. Head indistinctly tinted
with yellow. All dorsal region
brownish. Narrow yellow
longitudinal bands along each
row of scales. Black predorsal
line forward to occiput. Dorsal
membrane colorless, with a
row of oblique black spots,
forming series from base of
first spine to the end of the
eleventh ray. Anal colorless.
Caudal red, yellowish basally,
blackish terminally, also narrow
line along its upper edge;
Paired fins red. Length 270 mm.
(Chabanaud.)

Annam.

Branchiostegus ilocanus Herre

Branchiostegus ilocanus Herre, Philippine
Journ. Sci., vol. 35, ^{no. 1,} p. 32, pl. 3, 1928
(type locality, market at Harvacan,
Ilocos Sur Province, Luzon).

above. Back and sides with faint yellow lines, spots and vermiculations. Apparent line at base of soft dorsal violet. Dorsal rays and spines pale greenish, membranes anteriorly with greenish mottling, posteriorly hyaline. Caudal pale green, with 6 greenish cross bars, - darkest on upper and lower fin margins. Anal like dorsal. Pectoral pale yellow. Ventral rays bluish white, membranes mottled green and white.

A 462. Tumbatian Island. September 9, 1909. Length 275 mm.

11689. Tutu Bay, Jolo Island.
September 19, 1909. Length 153 mm.

Depth $3\frac{3}{5}$; head $2\frac{9}{10}$.

Snout $2\frac{1}{3}$ in head; eye $4\frac{1}{4}$, $\frac{3}{4}$ in snout, subequal with interorbital; maxillary reaches $\frac{2}{3}$ to eye, length 3 in head; upper teeth biserial except as 4 rows anteriorly, outer little enlarged and last, each side hooked canines; lower teeth uniserial and enlarged at sides of jaw, and 3 low rows in front; interorbital $4\frac{1}{3}$ in head, low, longitudinal groove in middle; preopercle edge denticulate.

Scales 60 in lateral line (not shown on figure); 25 transversely. Predorsal scales forward to front part of interorbital. Snout, jaws, suborbital and under side of

43

head naked. Fine scales on pectoral and on more than basal half of caudal. Cheeks with 8 rows of scales, 3 middle rows enlarged.

D. VII, 14 (figure shown ~~VI, 14~~), first and second spines united, last spine 3 in head, twelfth ray $1\frac{1}{2}$; A. II, 11, second spine $3\frac{4}{5}$, sixth ray 2, caudal $1\frac{1}{4}$, obliquely truncate, with upper rays longest; least depth of caudal peduncle $2\frac{9}{10}$; pectoral $1\frac{1}{4}$; ventral $2\frac{1}{10}$.

Back and top of head dusky olive, sides and belly silvery. Black predorsal seam to front of interorbital. Snout and suborbital yellow, with triangular-orange spot on lower median portion of snout.

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Yellow basal band on dorsal.
Blackish marginal dorsal line
and upper pectoral margin.
Anal and paired fins colorless.
Olive brown triangle covers
lower third of caudal, apex
at lower side of caudal
peduncle; central longitudinal
olive brown band and marginal
line of olive brown above;
rest of fin yellowish. Length
270 mm. (Herre.)

Luzon.

Branchiostegus vittatus Herre

Branchiostegus vittatus Herre,
Philippine Journ. Sci., vol. 31, p. 535,
pl. 2, 1926 (type locality, Manila
market).^{no. 4,}

[1919].
A 487 and A 488, 12242, Lampinigan
Island. September 11, 1909. Length 205
to 220 mm. General color of head and
side purplish, reticulations enclosing
olive areas fading to sulphur yellow;
larger on back where about $\frac{1}{3}$ of pupil
diameter and on lower side $\frac{1}{4}$ of pupil.
Breast and belly satiny drab, without
spots. Spinous dorsal and anal hyaline,
more or less mottled with darker;
rays of soft fins spotted with pale
and dark blue. Caudal more dusky.
Pectoral pale yellow. Ventral like
spinous dorsal.

9158, 9159, 7969. Little Santa Cruz, Zamboanga.
May 26, 1908. Length 183 to 290 mm.

9296 to 9298. Murcielagos Bay. August
9, 1909. Length 238 to 277 mm.

12565, 12566, 17326, 20299, 20300. Near Palay
Bay, Luzon. June 16, 1909. Length 183 to 235 mm.

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Depth $3\frac{3}{4}$ to 4; head $3\frac{1}{2}$ to $3\frac{2}{3}$. Snout $2\frac{2}{3}$ to $2\frac{3}{4}$ in head; eye $3\frac{1}{2}$ to $3\frac{2}{3}$, $1\frac{1}{4}$ in snout, greater than interorbital; maxillary reaches $\frac{1}{2}$ in eye, length $2\frac{1}{8}$ in head; upper teeth with an outer enlarged row and 2 inner lower rows, with 4 short inner inner rows anteriorly in jaws, last of outer row small, hooked, forward pointed canine; lower teeth with outer strong row and 5 inner rows much smaller and reduced to one row posteriorly; interorbital low, nape at low longitudinal keel; hind preopercle edge finely denticulate.

Scales 68 to 72 in lateral line; 22 transversely. Pre-dorsal scales extend forward half way in interorbital. Opercles

and cheek sealed forward
far as perpendicular line from
eye to mouth angle, and 10
rows on preopercle. 47

D. VII, 15, last spine $3\frac{1}{5}$
in head, thirteenth ray $1\frac{2}{5}$;
A. II, 11, second spine 3, eleventh
ray $1\frac{9}{10}$; caudal $1\frac{1}{4}$, convex
behind; least depth of caudal
peduncle $2\frac{9}{10}$; pectoral $1\frac{1}{3}$;
ventral $2\frac{1}{5}$.

Silvery, with roseate flush
along upper half of body.
Inout deep pink. Pearl
colored band crosses snout
before eyes. From lower front
lip edge wide pearly band,
narrowing to upper lip; from
opposite hind pupil edge
silver band crosses cheek
nearly vertically to throat.

Large dark brown spot above origin of lateral line.
Black longitudinal line on middle of ridge crowning nape. Dorsal spines with black margin. Upper part of entire dorsal yellow, with basal pearly band its whole length. Caudal with 6 yellow bands on upper $\frac{2}{3}$, running back and a little diagonally upward, lowest one separated from the rest. Each scale above lateral line with a small dark spot, forming longitudinal rows. Below lateral line pearly spot on each scale, also forming faint lines. Length 240 mm. (Herre.)
Luzon.

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Branchiostegus wardi Whitley

Branchiostegus wardi Whitley, Rec.
Austral. Mus., vol. 18, ^{no. 6,} p. 335, pl. 39,
fig. 3, ^{April 20,} 1932 (type locality, off Port
Stephens, New South Wales, in 50 to
60 fathoms).

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dusky violet, nearly violet black. Side under and above pectoral extended with vertical lines of smoky purplish, below and behind forming regular network. On back ground color appears as spots in more regular broad network of purplish, somewhat as on top of head. Dorsal olivaceous, rays with pale spots. Anal like dorsal, markings less distinct. Caudal rather olivaceous, more or less clouded with purplish basally. Pectoral very pale hyaline yellow. Ventral dusky and whitish.

A 492. Isabela River. September 11, 1909.
Length 70 mm.

10552. Jolo. March 7, 1908. Length—
240 mm.

15525. Langao Point, Luzon. June 24,
1909. Length 243 mm.

Depth $3\frac{4}{5}$; head $3\frac{1}{5}$. Snout ⁵⁰
 $2\frac{2}{3}$ in head; eye $4\frac{2}{3}$, $1\frac{7}{8}$ in
snout, longer than interorbital;
maxillary apparently reaches
eye, length $2\frac{3}{4}$ in head;
an outer row of small canines
and an inner band of
villiiform teeth in each jaw;
interorbital low; top of head
before interorbital soft and
tumid; predorsal with low
crest. Lower gill rakers 14.

Scales 76 in lateral line
to caudal base; 8 above, 23
below. Cheeks with 10 transverse
rows of scales.

D. VII, 15, seventh spine
 $3\frac{1}{2}$ in head, twelfth ray $1\frac{4}{5}$.
A. II, 11, second spine $4\frac{1}{8}$,
tenth ray 2; caudal $1\frac{1}{4}$
(apparently double concave)

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behind?); least depth of caudal peduncle $2\frac{3}{5}$; pectoral $1\frac{1}{2}$, rays I, 17; ventral I, 5, fin 2 in head.

Light brownish above, shading white below, without defined cross bands. Crest of head, suprascapula, pectoral base and axilla yellow. Some faint orange or yellow blotches along lateral line. Front of head faint lavender. Eye milky bluish. Dorsals grayish, with yellow along base and disposed irregularly on membranes; narrow smoky inframarginal stripe. Anal and ventrals uniform smoky gray. Uppermost caudal rays gray; most of upper lobe yellow, brightest on

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sixth ray; seventh and part
of eighth ray gray; an
oblique bright yellow band
crosses base of lower lobe
and extends along parts of
eighth and ninth rays; lowest
part of lobe dark grayish,
with whitish margin below.
Pectoral light gray, with
narrow black margin to
first 2 rays. Length without
caudal 330 mm. (Whitley.)

New South Wales.

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Branchiostegus doliatus (Cuvier)

Latilus doliatus Cuvier, Hist.

Nat. Poiss., vol. 5, p. 375, pl. 130,
1830 (type locality, Mauritius).

— Günther, Cat. Fish. Brit.
Mus., vol. 2, p. 253, 1860 (Mauritius).

— Bleeker, Rech. Faune Madagascar,
pt. 4, p. 78, 1874 (reference). —

Sauvage, Hist. Nat. Madagascar,
Poiss., p. 517, 1891 (reference).

57

— Gilchrist and Thompson, Ann.
South African Mus., vol. 6, pt. 3,¹³
p. 70, May 7, 1914 (off Natal
coast, in 50 fathoms; Tugela
River mouth, N. 19½ miles); ~~as~~
Ann. Durban Mus., vol. 1, pt. 4,
p. 348, May 21, 1917 (reference).
→ Barnard, Ann. South African
Mus., vol. 21, pt. 2, p. 502, Pl. 21,
fig. 3 (copied) (Natal, 50 to 183
fathoms).

Branchiostegus doliatus

55

Latilus doleatus Swainson,
Nat. Hist. Animals, vol. 2, p.
219, 1839 (reference).

56

Depth $3\frac{1}{3}$ to $3\frac{2}{3}$; head $3\frac{2}{3}$ to
 $3\frac{4}{5}$. Snout 3 in head; eye $2\frac{4}{5}$
to 3, subequal with snout or
interorbital; maxillary reaches
 $\frac{2}{5}$ in eye, length $2\frac{2}{5}$ in head;
canine teeth at symphysis of
jaw, one hind end of lower jaw;
and one at hind end of upper
jaw; interorbital low. Lower
gill rakers 10 or 11.

G. IV, 15 or 16, third ray 2 in
head; A. II, 12, third ray $2\frac{3}{5}$,
caudal 1; truncate or slightly
marginate; least depth of
caudal peduncle $2\frac{7}{8}$; pectoral
1; ventral $2\frac{1}{4}$.

Rose colored, silvery, with
numerous, dark, vertical
cross bars on upper part of
body. A dark opercular spot.
Length 350 mm. (Barnard.)

Natal, Mauritius. Gilchrist
and Thompson give the scales 102
in a lateral count, 8 above and
29 below.

Branchiostegus doleatus (Cuvier)

Latilus doleatus Cuvier, Hist. nat.

Poiss., vol. 5, p. 375, pl. 130¹⁸³⁰ (type locality, Mauritius). — Giinther, Cat. Fish. Brit. Mus., vol. 2, p. 253, 1860 (Mauritius). —

Swainson, Hist. Nat. Madagascar, Poiss., p. 517, 1891 (reference).

Swainson, Nat. Hist. Animals, (vol. 2, p. 219, 1839 (reference)).

— Bleeker, Rech. Faune Madagascar, Gollen et Van Dam, pt. 4, p. 78, 1874 (reference).

Latilus doleatus Swainson, Nat. Hist. Animals, vol. 2, p. 219, 1839 (reference).

Branchiostegus sericus Herre

Branchiostegus sericus Herre,
Hong Kong Naturalist, vol. 6, nos. 3-4,
p. 285, Dec. 4, 1935 (type locality,
Hong Kong market).

59

Depth 4, anterior profile boldly marked, with marked heel from dorsal origin to middle of interorbital; head $3\frac{2}{3}$. Snout $2\frac{4}{7}$ in head; eye $3\frac{9}{10}$, $1\frac{1}{2}$ in snout, 1 in interorbital; maxillary extends below hind edge of pupil, length $2\frac{1}{3}$ in head; suborbital $5\frac{1}{10}$ ~~miss~~; hind edge of preopercle denticulate. Gill rakers 6 + 13.

Scales 70 to 72 in lateral series to caudal base; 50 + 4 tabulated scales in lateral line; 24 scales transversely to anal origin; 8 rows on ^{the} opercle.

D. ~~VIII~~ - 14, origin over upper end of pectoral base, first spine $3\frac{1}{3}$ in head, second spine $2\frac{3}{5}$, twelfth ray $1\frac{2}{5}$; A. II - 12, twelfth ray reaches caudal

when depressed or $5\frac{1}{10}$ in fish⁶⁰
without caudal, eleventh ray
 $1\frac{9}{10}$ in head or 7 in fish without
caudal.

Dusky violaceous above
lateral line, silvery below,
becoming yellow on cheeks, chin
and throat, with pink or roseate
flush over all and violet glints
whenever light strikes at a
different angle. Two parallel
dark violet lines run from
head to caudal, one on lateral
line, other on second row of
scales above; each scale between
this line and dorsal fin with
deep violet center; from anterior
margin of eye yellow pearly
band descends slightly
backward to maxillary; from
margin of eye beneath pupil
similar stripe runs nearly to

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angle of maxillary; on tip of snout above upper lip large broad violet black spot. On nape before first dorsal large elongate black blotch, equals eye; extends up first dorsal spine. On upper half of soft dorsal row of elongate very dark violet spots, one between each 2 rays; between first and third rays a very large violet black spot covering nearly whole membrane. Anal yellow basally, rest of fin pale violet. Caudal dusky violet, upper half with yellow longitudinal stripes between rays. Pectoral smudged with dusky violet on its upper median portion and on its tip, rest yellow. Ventrals yellow. Length 245 mm.

(Herre.)

China.

Genus Lopholatilus Goode and Bean

Lopholatilus Goode and Bean, Proc.

~~Acad.~~ U. S. Nat. Mus., vol. 2, p. 205,
1879⁽¹⁸⁸⁰⁾. (Type Lopholatilus chamaeleonticeps Goode and Bean,
monotypic.)

1300

all pale or light brownish generally,
inclining to yellowish.

Seram, East Indies, Philippines, Rin
Kini, Indonesia. Our examples quite vari-
able in the size and disposition of the
spots on the body. In some they are
very sparse over the body, scattered
thinly over the trunk and tail, hardly
any or none on the costal region. In
others they may be exceedingly numerous,
close-set and very small over the
trunk and tail anteriorly. In young
examples the spots are front and laterally
large and similar to those on the head.
In all examples the spots are well
developed, similarly large, crowded
and conspicuous on the head.

Ten-thisis ten-thopsis de Vis is based on
an example about 202 mm. long and though
its proportions do not altogether agree
its color pattern seems applicable. It
is said to have the lower part of the
head, chest and fore part of the trunk
with rather large, pale, dark edged
spots, most conspicuous on the opercle,

Body elongately ovate, compressed.
Head large, deep, well compressed, sides flattened.
Snout long, high. Eye small, high, midway in length of head. Mouth large, low, or little inclined and lower jaw protruding. Maxillary reaches far as eye. Upper teeth with an outer enlarged series followed by an inner band of villiform teeth; lower teeth with an outer enlarged row, canine like and an inner band of conic teeth. No teeth on palate. Fleshy prolongation on each side of labial fold, extends back beyond angle of mouth. Long pointed adipose appendage on predorsal. Scales small, Caudal scaly basally. Cheeks and opercles with small scales.

Lateral line high, complete to caudal base. Dorsals continuous, spines few. Anal with still fewer spines, soft fin like soft dorsal. Caudal emarginate.

Paired fins less than head.

~~Three~~^{Two} species in the ~~north~~ western Atlantic in deep water.

Large, handsome fishes and valuable as food. Vast numbers have been found floating on the waves, evidently having been destroyed by temperature changes in 1882.

The fish then disappeared and were not found until a decade later.

Lopholatilus villarii Miranda-Ribeiro

Lopholatilus villarii Miranda-Ribeiro,
Arch. Mus. Nac. Rio de Janeiro,
vol. 17, pt. 1, p. 510 ^{date?} (Praga
do Mercado, Brazil).

Lopholatilus chamaeleonticeps Goode
and Bean

Lopholatilus chamaeleonticeps Goode
and Bean, Proc. U. S. Nat. Mus.,

(1880)
vol. 2, p. 205, 1879, (type locality,
2. lat. 40° , W. long. 70° , 80 miles
south by east off Noman's Land in
84 fathoms).

— Jordan and Gibert, Bull. U. S. Nat.
Mus., No. 16, p. 624, 1883 (copied). —
Goode, Rep. Fisher. Indust. U. S.,

p. 360, pl. 117, 1884.

— Lucas, Rep. U. S. Nat. Mus., p. 647, Pl., 1889. —
— Goode and Bean, Copeia Ichth.,
p. 284, pl. 75; fig. 265, 1895 (Gulf
Stream).

— Jordan and Evermann, Bull. U. S.
Nat. Mus., No. 47, pt. 3, p. 2278, 1898.
(copied).

1299

depth 2 to $2\frac{1}{4}$; head $3\frac{1}{4}$ to $3\frac{3}{5}$, width 2 to $2\frac{1}{4}$. Snout $1\frac{4}{5}$ to 2; eye 3 to 4, $1\frac{2}{3}$ to $2\frac{1}{8}$ in snout, ~~less than~~ $1\frac{3}{4}$ to $1\frac{1}{8}$ in interorbital; teeth about 32 in jaws; maxillary 4 to $4\frac{1}{8}$ in head; interorbital $2\frac{1}{4}$ to $3\frac{1}{10}$, broad, and slightly convex; preopercle flaring, opercle and scapular arch striate. Gill rakers 4 + 18, short, minute points.

Scales minute, ovoid, cycloid, circuli with 28 to 33 circuli leaving rather long, entire median area. Cheek, excepting upper preorbital region, covered with numerous small scales; greamous area equally extensive in young.

D. XIII, 10, E, fifth spine $1\frac{2}{3}$ to $2\frac{1}{10}$ in head, fourth ray $1\frac{2}{5}$ to $1\frac{2}{3}$; A. VII, 9, I, third spine $1\frac{2}{3}$ to $2\frac{1}{5}$, second ray $1\frac{3}{4}$ to $1\frac{7}{8}$; caudal deeply forked, $2\frac{7}{10}$ to $3\frac{3}{4}$ in combined head and body; least depth of caudal peduncle, $3\frac{1}{8}$ to $4\frac{1}{8}$ in head; pectoral $1\frac{1}{5}$ to $1\frac{1}{3}$; ventral $1\frac{1}{2}$ to $1\frac{3}{5}$.

Light brown generally, head, trunk and tail everywhere with small light blue-gray ocelli bordered with deeper brown, variable and usually most distinct and largest on head and trunk anteriorly. Along breast, belly and lower basal region of spinous anal spots as bars or short lines with irregular or semi-waved appearance. Spots also extend out on caudal base somewhat and slightly on dorsals and anals in some examples. Iris pale yellowish. Fins

- Fowler, Rep. N. J. State Mus., p.
340, pl. 68 (copied), 1905 (1906)
(h. lat. $40^{\circ}7'$, W. long. $69^{\circ}34'30''$, in
600 fathoms).
- Sumner, Dobson, Cole, Bull. Bur.
Fis., vol. 31, pt. 2, p. 767, 1911 (1913)
(border of Gulf Stream).

Bon. Soc. Espan. Hist. Nat. Madrid, vol.
4, 1885, p. 22 (Rubi, New Guinea). —

Fowler, Journ. Acad. Nat. Sci. Phila., vol. 12,
series 2, 1904, p. 546 (Padang).
Tenthis corallinus Playfair, Fisher of Zanzibar,
1866, p. 50 (Meychelles).

Siganus corallinus Jordani and Richardson,
Bull. Bur. Fisher., vol. 27, 1907 (1908), p. 271
(Cagayancillo). — Vander, Proc. U. S. Nat.
Mus., vol. 42, 1912, p. 511 (Okinawa). —

Fowler, Proc. Acad. Nat. Sci. Phila., 1918, p.
69 (Philippines; Padang). — Fowler, Copeia,
no. 58, June 18, 1918, p. 64 (Philippines). —

Fowler and Beam, Proc. U. S. Nat. Mus., vol.
62, 1922, p. 58 (Zambung a; Padang).

Tenthis studeri Peters, Monatsh. Akad.
Wiss. Berlin, 1876 (1877), p. 834. New
Britain.

Tenthis gibbosus teeth opus de Vis, Proc. Linn. Soc. New
South Wales, vol. 9, 1884 (1885), p. 468. Queensland Coast.